



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

November 15, 2011

Mr. R.P. Smith
Vice President/General Manager
Formosa Plastics Corporation, Texas
P.O. Box 700
Point Comfort, Texas 77978

RE: Approval of the CMI Community Relations Plan for the Administrative Order on Consent (AOC) Docket #VI - 001(h)-90-H

Dear Mr. Smith,

The purpose of this letter is to formally approve the final Community Relations Plan (CRP) submitted on May 12, 2011. This final report addresses concerns and issues documented in comments on the July 28, 2010 draft CRP. As noted in your responses to the August 25, 2010 EPA comments (which we received on March 23, 2011) the decision was made to not create or manage a web site to keep citizens informed of the status of remedy implementation phases of RCRA corrective action. As such, it is EPA's expectation to get assistance in compiling a mailing list that will be used by the EPA to send flyers to citizens with important updates and milestones. We would like to start with the list of names and contact information of the Community Advisory Board, referred to in Sections 4.3.1 and 4.3.2 of the CRP.

If you have any questions or concerns, please feel free to contact me at 214.665.8385.

Nancy Fagan

A handwritten signature in cursive script that reads "Nancy Fagan".

Project Coordinator

cc: Mr. Brad Genzer
TCEQ Region 14
6300 Ocean Drive, Suite 1200
Corpus Christi, TX 78412

Ms. Jacquelyn Rodriguez, MC-127
TCEQ
P.O. Box 13087
Austin, TX 78711-3087

**ENFORCEMENT CONFIDENTIAL - Not to be released under FOIA -
INTERNAL DELIBERATIVE**

MEMORANDUM

TO: File

FROM: Frances Verhalen (6EN-HC)

DATE: August 27, 2010

RE: Teleconference with Formosa Plastics to Discuss Inspections
Photographs (June 15-17, 2010)

Today, Nancy Fagan and I contacted Matt Brogger and David Hill, both from Formosa Plastics Corporation (FPC) in Point Comfort, Texas. The purpose of the call was to discuss which photographs taken by Fagan during the inspection on June 15-17, 2010 were considered by FPC to be confidential business information (CBI). According to Mr. Hill, FPC is not claiming CBI for any of the photographs.

Mr. Hill requested a hard copy of the report and photographs but requested an electronic copy of the attachments, most of which he provided originally.

7/21/2010

Matt Brogger, David Hill
Nancy Fagan, Francis Verbal

- Discussed photos. ~~to~~ send electronic copy to David Hill/
Matt Brogger.
Set next discussion date ~~set~~ for 2 weeks after
diskette sent

CA reports - amc. w/ Spill table sent

- o Contractor areas - Boilerplate language - needs
atty approval

- o VCP applic / permit
 sent original report
 voluntary TCEQ response
 original file sent to TCEQ
 Annual reports to TCEQ - re: EDC

SPEC Plan - EPA two copies - one for entire plant
~ 8" thick

Waste Analysis plan - 2 hazardous notebook

North of RR tracks - container storage areas, 73 areas
*take drums to 90d hme

1993 - ^{release} EDC came from pipe failure & then tank explosion
relaxation in 1998; residue from explosion but not confined

Soils in SPVC

HUD - check against NOR

multiple volumes 3 vols hw

10 vols nonhw

Visit to PVC plant

- "Rock scale" bags in Cmpd area
- "Scale" only in PVC plant
- Add letter to pictures, asking questions specific to the photos

• GERE's report - matt provide rpt.

**Formosa Plastics Corporation
Point Comfort, TX**

7/21/2010
Enforcement Confidential
-DO NOT RELEASE UNDER FOIA -
Internal Deliberative
not Ent. Conf. - any more - 8-31-2017 - fresh

DOCUMENT TITLE	DOCUMENT NO.	CBI
Site maps/footprint	Storm water drainage maps; PC Plant and expansion dated 06-07-2004	
Underground utilities maps	Company-claimed CBI	YES
Spill reports for January 1, 2005 through May 31, 2010	Table (pdf)	
Fire reports for January 1, 2005 through May 31, 2010	Table (pdf)	
Discharge reports for January 1, 2005 through May 31, 2010	Table (pdf)	
Leak reports for January 1, 2005 through May 31, 2010	Table (pdf)	
Groundwater reports with gradient maps, historical data, well logs, contaminant maps, etc. for January 1, 2005 through May 31, 2010	Six reports - January 25, 2005; January 31 2006; January 25, 2007; January 25, 2008; January 23, 2009; January 25, 2010	
Corrective Action reports for January 1, 2005 through May 31, 2010		
Investigation reports for Brookings property	(Nancy)	
RCRA investigation reports for Formosa property	EDC Spill report - October 25, 1994; Cox's Creek Remediation Report - September 1999; Culverts No. 6 and 7 Closure - December 1999; Outfall 006 and Diversion Ditch - September 1999; Olefins Unit Cleanup - September 1998	
Description of environmental requirements for contractor areas and activities		
Copy of Clean Air Act application and permit	Description portions (Section VIII) for Caustic/Chlorine plant; ethylene glycol plant; olefins plant; ethylene dichloride; LLDPE/HDPE, polypropylene plant; traffic facility; utilities plant	
Copy of Clean Water Act application and permit	Application dated January 27, 2010 with correspondence; WQ Permit - WQ0002436000	
Copy of VCP application and plan		
Copy of VCP reports from January 1, 2005 through May 31, 2010		
Copy of SPCC plan		
Copy of waste management plan	<i>Do not want at this time</i>	
Copy of waste analysis plan	<i>Do not have; not necessary</i>	
Copy of the Notice of Registration for Hazardous Wastes (TCEQ)	<i>Do not want at this time</i>	6/15/2010
List of Solid Waste Management Units (SWMU)		
Map of locations of SWMUs		
Copy of solid and hazardous waste determinations	<i>Check against ROR</i>	
Copy of supporting documents for applicable exemptions for solid or hazardous waste determinations	Catox Process Recycling [three heavy ends/light ends from Baton Rouge to PC] - January 4, 2000; Concrete and Black Beauty - October 24, 1995; Distillation Bottoms [use for PCE, TCE from PC to Lake Charles]	



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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DALLAS, TX 75202-2733

REQUEST FOR DOCUMENTS FORMOSA PLASTICS CORPORATION, POINT COMFORT, TX JUNE 15-17, 2010

DOCUMENT TITLE	DATE	DOCUMENT NO.	CBI
Site maps/footprint	6/26/10		N
Underground utilities maps			
Spill reports for January 1, 2005 through May 31, 2010			
Fire reports for January 1, 2005 through May 31, 2010			
Discharge reports for January 1, 2005 through May 31, 2010	no DMLs		
Leak reports for January 1, 2005 through May 31, 2010	no air emissions		
Groundwater reports with gradient maps, historical data, well logs, contaminant maps, etc. for January 1, 2005 through May 31, 2010	6/26/10	1/25/2010	
Corrective Action reports for January 1, 2005 through May 31, 2010	same as gw report		
Investigation reports for Brookings property 2007 - Boring & Hi Resolution Spills	EPA has copies of this (N. Fagan)		
RCRA investigation reports for Formosa property	does not receive from YCBQ		
Description of environmental requirements for contractor areas and activities	no reports;		
Copy of Clean Air Act application and permit			
Copy of Clean Water Act application and permit	6/26/10 6/26/10	2/17/10 application 9/17/05 permit	
Copy of VCP application and plan EDC			
Copy of VCP reports from January 1, 2005	6/26/10	VCP Rpt. 9/1998	

DOCUMENT TITLE	DATE	DOCUMENT NO.	CBI
through May 31, 2010			
Copy of SPCC plan			<i>no</i>
Copy of waste management plan			<i>same as waste analysis plan</i>
Copy of waste analysis plan <i>5 volume set on hold</i>			
Copy of the Notice of Registration for Hazardous Wastes (TCEQ) <i>§</i>	<i>will send</i>		
List of Solid Waste Management Units (SWMU) ✓			
Map of locations of SWMUs ✓			
Copy of solid and hazardous waste determinations <i>9 volume set</i>			
Copy of supporting documents for applicable exemptions for solid or hazardous waste determinations			
Culverts No. 6 & 7 Paper Closure	6/26/10	Dec. 1999	
Outfall No. 6 <i>006</i> and Outfall 006 Diversion Ditch	6/26/10	Sept. 1999	
<i>→ Report of Quality in Cox Creek / data</i>			

Requested by: Frances Verhalen (6EN-HC)

**Inspection Plan for Formosa Plastics Corporation,
Point Comfort, Texas**

June 15, 2010

GENERAL INFORMATION

1. Site Name: Formosa Plastics Corporation
2. Physical Location: 201 Formosa Drive, Point Comfort, Texas 77978
3. EPA ID Number: TXT490011293 (TSD/LQG); TX0000888164 (CeSQG)
4. Site Operator: Matt Brogger, Regulatory Manager (361-987-7468)
5. Site Address: 201 Formosa Drive, Point Comfort, Texas 77978
6. Site Description:

Formosa Plastics Corporation is a 1,600 acre chemical manufacturing facility and produces vinyl chloride (PVS) powder from polymerized vinyl chloride monomer (VCM). This is a two-stage process. The first stage of production produces ethylene dichloride (EDC) by direct chlorination or by oxychlorination. The second stage of production is the 'cracking' stage when VCM is produced and polymerized to form PVC pellets.

On February 27, 1991, EPA issued a final Administrative Order on Consent to complete corrective actions to cleanup contaminated soil and groundwater associated with spills or discharges of EDC, VCM, and wastes associated with the production of the products. As part of that Order, Formosa was required to complete and implement Corrective Measures for areas associated with *the wastewater treatment plant* and *the storm water detention pond* in the southwest area of the facility. These areas under corrective action remediation are known as the **pre-1990 area**.

Formosa expanded its plant in 1990 to include areas north of the EDC and VCM areas (known as the **expansion area**). Formosa also purchased the **Former Brookings Property**, located on the south-southeast corner of the property in 2005. These areas have not been fully characterized by the facility.

The purposes of the inspection are to inspect the locations of contamination in the pre-1990 areas; inspect the post-1990 areas (new plant); review the schedule of corrective actions; inspect the drainage pathways into Cox Creek;

request information about leaks/spills/discharges/fires and remedial cleanups for past five years; inspect the contractors' lay-down yards; and collect information associated with citizens' complaints.

7. Ownership: Private

8. Function: TSD

9. Regulatory Status

a. TSDF LQG (TXT490011293)

b. CWA (TX0085570 major)

c. CAA (4805700015 major; 4805700026 major)

10. Inspector Information: Frances Verhalen, P.E., Environmental Engineer, US EPA Region 6 (EN-HC), 214-665-2172

11. Inspection Participants: Nancy Fagan, Environmental Scientist, US EPA Region 6 (6PD), 214-665-8385

1. Request a site map/footprint. Add process diagram, piping maps and diagrams.

a. Pre-1990 area

i. WWTP AOC: EQB, Andco Basin, Aeration Basin, Sludge Drying Beds

ii. VCM Area: PVC Settling Pits, Incinerator area, EDC storage tank VT 763-A and VT 763-B, Secondary Containment EDC Tank VT 732

b. Expansion (post-1990 or north of the railroad tracks) area

c. Former Brooking Property

d. Contractors' lay-down yards

2. Describe the waste, wastewater, and air control units operating at the facility.

3. What wastes are produced from the waste, wastewater and air handling activities?

4. How much waste is generated annually (past 3 years)? How are wastes managed (handled and disposed)? Analytical? Manifests?
 - a. Interim storage facility?
 - b. Controls employed at the interim storage facility?
5. Discuss facility process(es) with facility manager/environmental director:
 - a. What materials/raw materials are used?
 - i. Check on wastewater chemicals, cleaning solvents, air flocculants/dispersants
 - ii. Check on water sources
 - b. Where do the materials/raw materials come from?
 - c. How are the materials processed?
 - d. How are materials stored?
 - e. Locations/Solid Waste Management Units
 - i. Ask for list of SWMUs
 - ii. Containers type, number, condition
 - iii. Surface impoundment details
 - f. What wastes are generated in each process? Including:
 - i. Solid waste
 - ii. Liquid waste
 - iii. Air emissions
 - iv. Storm water runoff
 - g. Have waste determinations been made on each waste stream?
 - h. How are the wastes managed and disposed?
 - i. How are the wastes transported around the facility?
 - j. Are there other air emissions sources?

6. Monitoring activities:

- a. Describe groundwater monitoring system (Multiple aquifer units)
- b. Stormwater/air/wastewater monitoring

7. Discuss past releases:

- a. In case of an emergency, what plan is developed for the facility? Is it written?
 - i. Internal alarms, communication
 - ii. Contact of external emergency personnel
 - iii. Fire containment/control equipment
 - iv. Water, foam supplies
 - v. Equipment testing procedures, frequency
 - vi. Unobstructed ingress/egress
 - vii. Discussion with local emergency personnel
- b. SPCC plan? Current?
- c. Any spills within last 5 years? How managed?
- d. What procedures have been changed to prevent environmental contamination from occurring?

8. Other

- a. Have any soil or groundwater sampling investigations or CMS been conducted at the facility?
- b. What is the future plan for use of land?

9. Review facility documentation:

- a. Review analytical data (for products, wastes, soil, gw, etc.). Get copy
- b. Review copies of manifests. Get copies (?)
- c. Review TRI biennial report: due Jan. 2010
- d. Obtain copy of groundwater monitoring report 2005 through 2010

10. Site tour:

- a. Observe process areas
- b. Observe waste storage areas and note any visible releases to ground or air
- c. Observe drainage pathways going off-site
- d. Observe site security (i.e. fencing to prevent trespassers)
- e. Observe adjacent properties – any residential areas
- f. Locate on-site groundwater wells
- g. Observe contractor lay-down areas

11. Discuss CBI procedures/protocols.

Request for documents

- a. Site map/footprint
- b. Spill/fire/leak/discharge reports for January 1, 2005 through May 31, 2010
- c. Groundwater reports with gradient maps, historical data, well logs, contaminant maps, etc. for January 1, 2005 through May 31, 2010
- d. Corrective Action reports for January 1, 2005 through May 31, 2010

TCEQ contact: Phyllis Cunningham (361-825-3131), Brad Genzer (361-825-3106)

EPA ORC: Marcia Moncrieffe (214-665-7343)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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REQUEST FOR DOCUMENTS
FORMOSA PLASTICS CORPORATION, POINT COMFORT, TX
JUNE 15-17, 2010

Release

DOCUMENT TITLE	DATE	DOCUMENT NO.	CBI
Site maps/footprint			
Underground utilities maps			
Spill reports for January 1, 2005 through May 31, 2010			
Fire reports for January 1, 2005 through May 31, 2010			
Discharge reports for January 1, 2005 through May 31, 2010			
Leak reports for January 1, 2005 through May 31, 2010			
Groundwater reports with gradient maps, historical data, well logs, contaminant maps, etc. for January 1, 2005 through May 31, 2010			
Corrective Action reports for January 1, 2005 through May 31, 2010			
Investigation reports for Brookings property <i>do not need</i>			
RCRA investigation reports for Formosa property			
Description of environmental requirements for contractor areas and activities			
Copy of Clean Air Act application and permit			
Copy of Clean Water Act application and permit			
Copy of VCP application and plan			
Copy of VCP reports from January 1, 2005			

SPILL RECORDS on RR TRACKS TRAIN DERAILMENTS?

- SAMPLING - ? cooling towers
- what is WWTP protocol - check records
to see if they follow protocol

check tanks WWTP inspection: RECORDS of FLOW RATES
RECORDS FROM pH MONITORING METERS
→ look for FLOODING evidence?
→ composite samples are taken at outfalls
RECORDS?

2 per week?
3 per week?

what is specified in
WW permit?

PVC plant

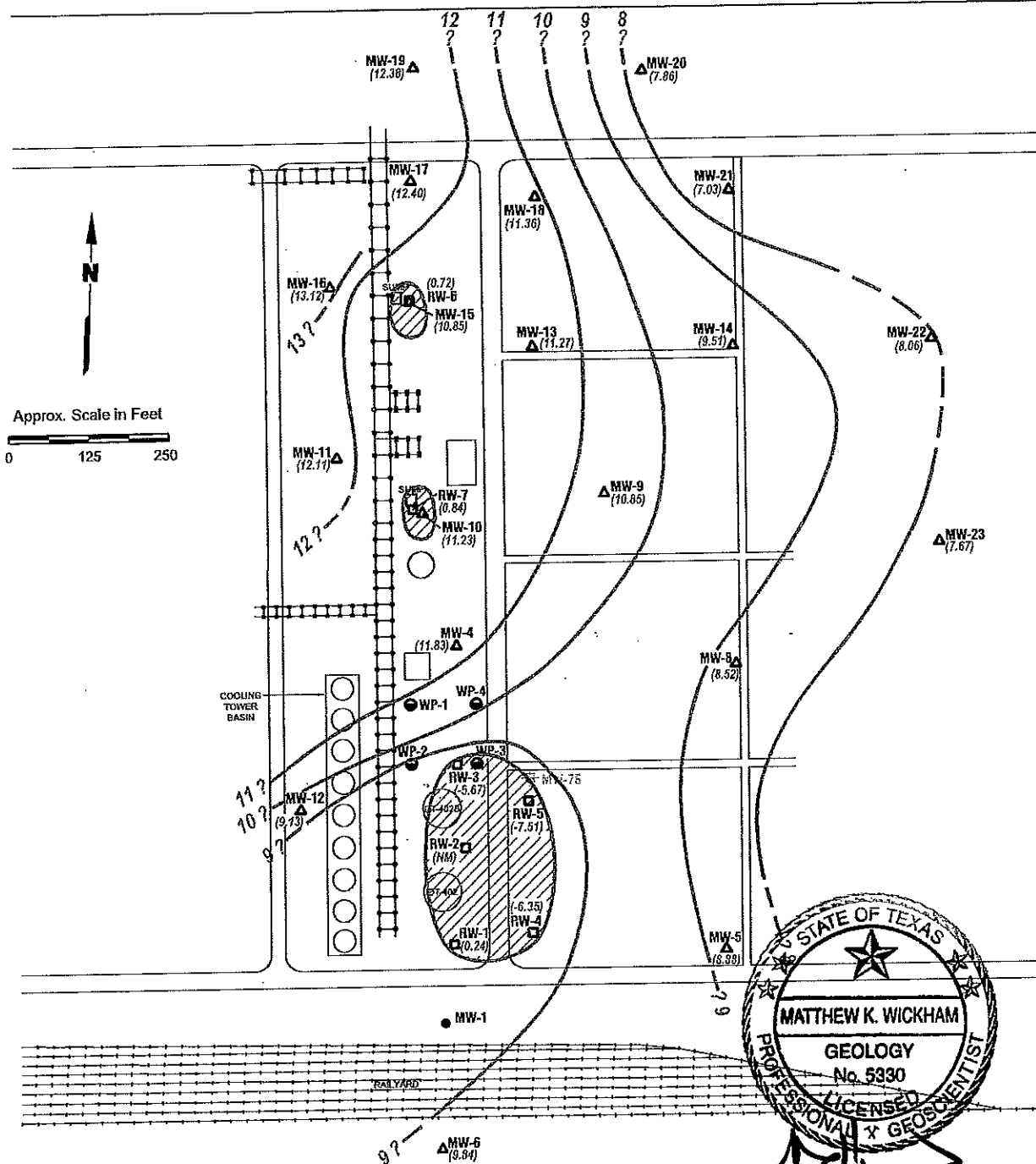
Compound plant -

VCM plant - railcar loading/unloading

Chemical Storage building

- OUTFALLS → and sample ports
- tank diked AREAS - WWTP
- Chemical warehouse AT WWTP
- Tank integrity TESTING RECORDS

[Signature]



Note:
MW-4 and MW-11 were barricaded during FPC unit work, therefore were not measured this quarter.

EXPLANATION

- | | | |
|--|--------|--|
| MW-6 Δ Monitoring Well Location | (9.84) | Groundwater Elevation (ft MSL) Measured November 3, 2009 (NM = Not Measured) |
| RW-1 \square Recovery Well Location | | |
| MW-1 \bullet Monitoring Well Plugged and Abandoned | | |
| Zone B Monitoring Well Location | | |
| WP-1 \bullet Well Point Location | | |
| | | Groundwater Elevation Contour (C.I. = 1 Ft) (dashed where inferred) |
| | | Area of Drawdown of Potentiometric Surface Caused by Pumping (not contoured) |

Source:
Base map taken from Ganem & Kelly Surveying, Inc. drawing PC05-075, dated 05/24/05.

FORMOSA PLASTICS CORPORATION

Figure 3

POTENTIOMETRIC SURFACE MAP ZONE A - NOVEMBER 3, 2009

PROJECT: 3163

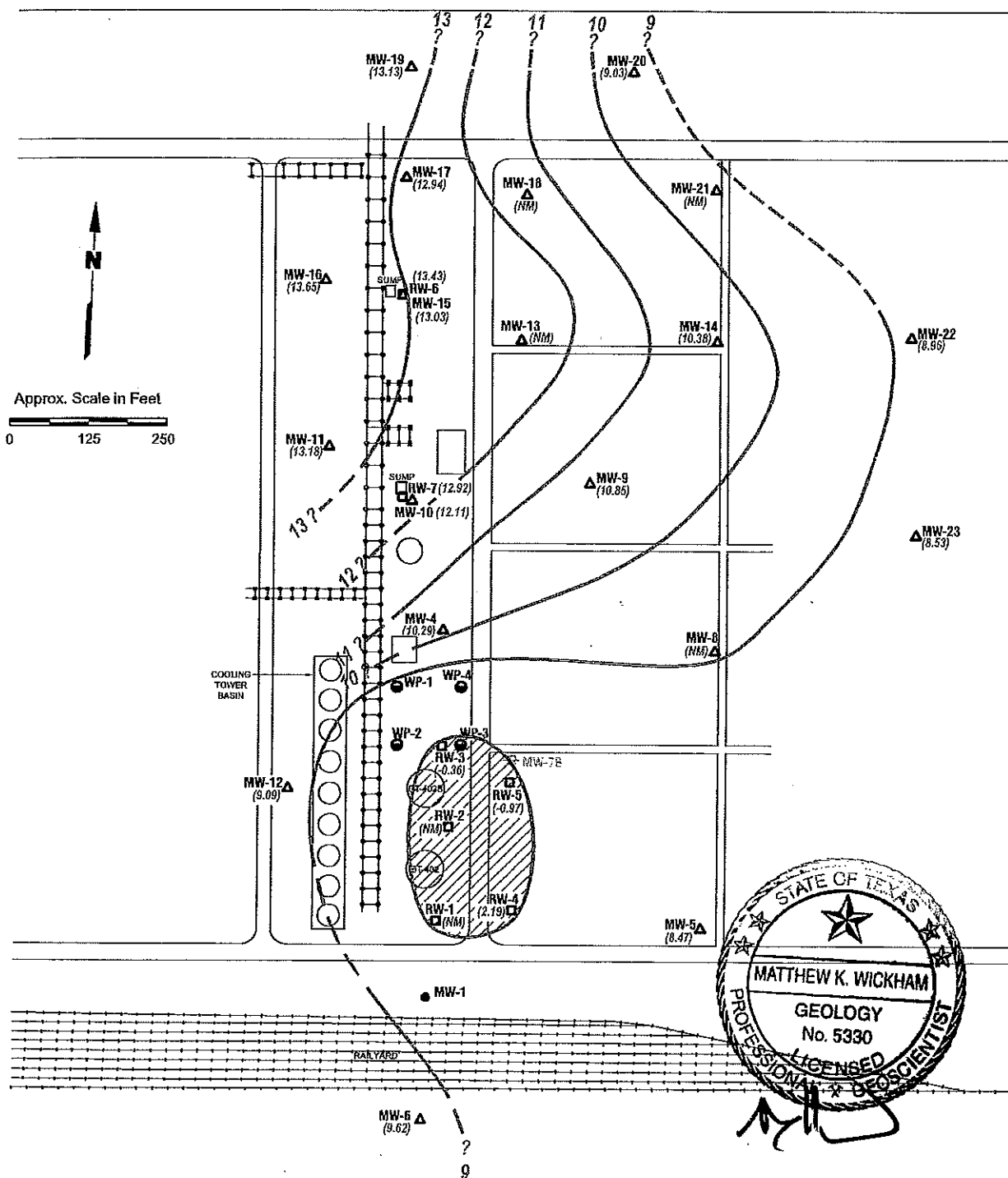
BY: ZGK

REVISIONS

DATE: JAN., 2010

CHECKED: MKW

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

- | | | | |
|------|--|--------|---|
| MW-6 | Monitoring Well Location | (9.62) | Groundwater Elevation (Ft MSL) Measured March 3, 2009 (NM = Not Measured) |
| RW-1 | Recovery Well Location | | |
| MW-1 | Monitoring Well Plugged and Abandoned | | |
| | Zone B Monitoring Well Location | | |
| WP-1 | Well Point Location | | |
| | Groundwater Elevation Contour (C.I. = 1 Ft) (dashed where inferred) | | |
| | Area of Drawdown of Potentiometric Surface Caused by Pumping (not contoured) | | |

Source:
Base map taken from Ganem & Kelly Surveying, Inc. drawing PC05-075, dated 05/24/05.

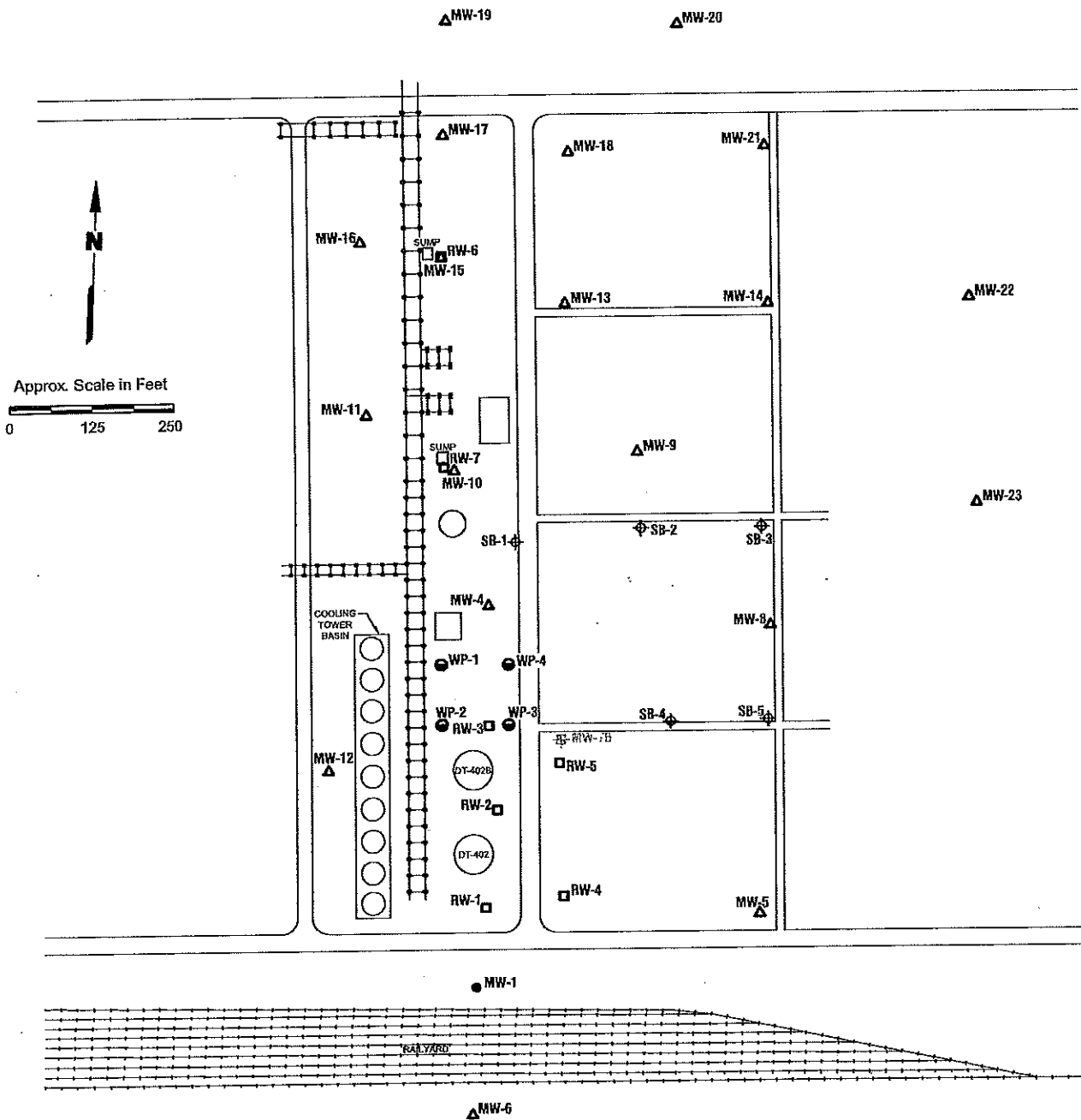
FORMOSA PLASTICS CORPORATION

Figure 2

POTENTIOMETRIC SURFACE MAP ZONE A - MARCH 3, 2009

PROJECT: 3163	BY: ZGK	REVISIONS
DATE: JAN., 2010	CHECKED: MKW	

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

- MW-6 ▲ Monitoring Well Location
- RW-1 □ Recovery Well Location
- MW-1 ● Monitoring Well Plugged and Abandoned
- MW-7B ▲ Zone B Monitoring Well Location
- SB-1 ⊕ Exploratory Boring Location
- WP-1 ● Well Point Location

Source:
Base map taken from Ganem & Kelly Surveying, Inc. drawing PC05-075, dated 05/24/05.

FORMOSA PLASTICS CORPORATION

Figure 1

SITE LOCATION MAP DT-401/DT-402 TANK AREA

PROJECT: 3163

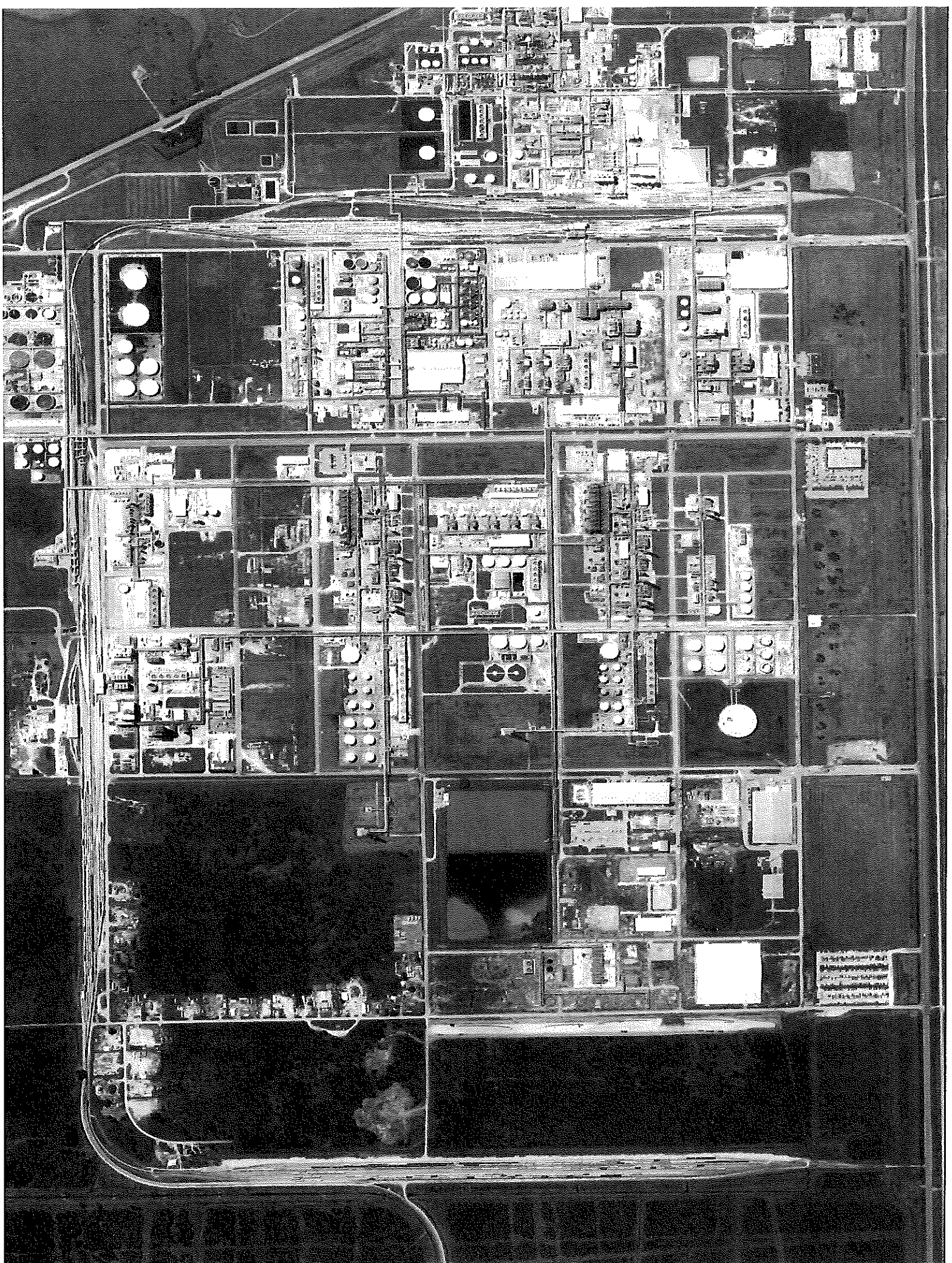
BY: ZGK

REVISIONS

DATE: JAN., 2010

CHECKED: MKW

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS





Fw: R6022 Deliverable: Draft Trip Report for Formosa Plastics Residential and Agricultural Wells Sampling
Nancy Fagan to: Frances Verhalen

06/10/2010 04:09 PM

----- Forwarded by Nancy Fagan/R6/USEPA/US on 06/10/2010 04:09 PM -----

From: "Rees, Christopher [USA]" <rees_christopher@bah.com>
To: Nancy Fagan/R6/USEPA/US@EPA
Cc: "Davol, Phebe [USA]" <davol_phebe@bah.com>, Flora Greene/R6/USEPA/US@EPA, repa4zone2deliverables <repa4zone2deliverables@bah.com>, Richard Mayer/R6/USEPA/US@EPA
Date: 05/12/2010 03:50 PM
Subject: RE: R6022 Deliverable: Draft Trip Report for Formosa Plastics Residential and Agricultural Wells Sampling

Hi Nancy,

I have made the requested revisions to the Trip Report and associated photographic log.

Regards,
Chris

From: Fagan.Nancy@epamail.epa.gov [mailto:Fagan.Nancy@epamail.epa.gov]
Sent: Wednesday, May 12, 2010 11:40 AM
To: Rees, Christopher [USA]
Cc: Davol, Phebe [USA]; Greene.Flora@epamail.epa.gov; repa4zone2deliverables; Mayer.Richard@epamail.epa.gov
Subject: Re: R6022 Deliverable: Draft Trip Report for Formosa Plastics Residential and Agricultural Wells Sampling

Please make the following changes to the report to get the citizen's names correct (as in the TDM):

you have "Woodard" and it should be "Woodland"

you have "Mummy" and it should be "Mumme"

thanks
nancy

From: "Rees, Christopher [USA]" <rees_christopher@bah.com>

To: Nancy Fagan/R6/USEPA/US@EPA
Cc: Richard Mayer/R6/USEPA/US@EPA, Flora Greene/R6/USEPA/US@EPA, "Davol, Phebe [USA]" <davol_phebe@bah.com>, repa4zone2deliverables <repa4zone2deliverables@bah.com>

Date: 05/11/2010 05:01 PM
Subject: R6022 Deliverable: Draft Trip Report for Formosa Plastics Residential and Agricultural Wells Sampling
ct:

Hi Nancy,

I have attached the draft Trip Report for the collection of groundwater samples from residential and/or agricultural wells within a five-mile radius of the Formosa Plastics facility located in Point Comfort, Texas. I will be delivering the hard copies to the EPA Region 6 office later this week. Please let me know if you did not receive all of the files (there should be three attachments) or have a problem opening any of the attachments.

Regards,

Chris Rees

Booz | Allen | Hamilton

[attachment "R6022_011_CvrLtr.pdf" deleted by Nancy Fagan/R6/USEPA/US] [attachment

"R6022_Formosa_Plastics_Trip_Report.doc" deleted by Nancy Fagan/R6/USEPA/US] [attachment

"R6022_Formosa_Plastics_Attachment_A.pdf" deleted by Nancy Fagan/R6/USEPA/US] [attachment

"R6022_Formosa_Plastics_Attachment_B.pdf" deleted by Nancy Fagan/R6/USEPA/US] [attachment

"R6022_Formosa_Plastics_Attachment_C.pdf" deleted by Nancy Fagan/R6/USEPA/US]



R6022_Formosa_Plastics_Attachment_C_revised.pdf R6022_Formosa_Plastics_Trip_Report_revised.doc

DRAFT TRIP REPORT
FOR
FORMOSA PLASTICS RESIDENTIAL AND AGRICULTURAL
WELL SAMPLING ACTIVITIES
POINT COMFORT, TEXAS

Submitted to:

U.S. Environmental Protection Agency
Region 6
1455 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Submitted By:

Booz Allen Hamilton
700 N. Saint Mary's Street, Suite 700
San Antonio, Texas 78205

EPA Task Order (TO) Number:	R6022
Contract Number:	EP-W-07-073
Booz Allen Hamilton TO Manager:	Christopher Rees
Telephone Number:	214/404-6215
EPA TO Contracting Officer's Representatives:	Rich Mayer / Nancy Fagan
Telephone Number:	214-665-7442/8385

May 11, 2010

DRAFT TRIP REPORT
FOR
FORMOSA PLASTICS RESIDENTIAL AND AGRICULTURAL
WELL SAMPLING ACTIVITIES
POINT COMFORT, TEXAS

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TABLES

Table 1	Participants in Sampling Event
Table 2	Sample Table

ATTACHMENTS

Attachment A	Copy of Field Notes
Attachment B	Copy of Signed Chain-of-Custody Form
Attachment C	Photographic log

1.0 INTRODUCTION

Under the U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA) Enforcement, Permitting, and Assistance (REPA4) Contract (No. EP-W-07-073), Booz Allen Hamilton (Booz Allen) provides program management and technical environmental services in Zone 2. Under Task Order R6022, Support for Sampling at RCRA and FUDS Facilities, Booz Allen was tasked to collect groundwater samples at four ranches located to the north and northeast of the Formosa Plastics Corporation facility and deliver the samples to the EPA Region 6 laboratory in Houston, Texas for analysis. This draft Trip Report has been prepared to document the groundwater sampling activities conducted during the April 2010 sampling event.

Table 1 provides a complete list of personnel present during the sampling event, along with their affiliations.

Table 1
Participants in Sampling Event

Name	Affiliation
Nancy Fagan	EPA Region 6
Wally O'Rear	ASE
Angela Sederquist	Booz Allen Hamilton

2.0 PROJECT DESCRIPTION

2.1 Facility History and Background

Formosa Plastics Corporation-Texas (FPC-TX) owns and operates a chemical manufacturing facility in Point Comfort, Texas. This facility is located in Calhoun County along State Highway 35 and Farm to Market (FM) Road 1593, adjacent to Lavaca Bay. FPC-TX manufactures vinyl chloride monomer (VCM) and ethylene dichloride (EDC), which are used to produce polyvinyl chloride (PVC) resin. A release or upset within the wastewater treatment system at the facility resulted in groundwater contamination. In accordance with EPA Administrative Order on Consent (Order) dated February 27, 1991 (EPA I.D. No. TXT490011293), FPC-TX has undertaken measures to characterize and remediate soil and groundwater affected by site constituents at the Point Comfort facility.

2.2 Project Objectives

As part of the community involvement, the EPA conducted a residential well survey in October

2009 and received responses from four property owners within a five mile radius of the FPC-TX site. The purpose of this sampling event is to collect groundwater samples for volatile organic compound (VOC) analysis to respond to citizens' concern that contamination may be present in their well water.

2.3 Site Description

The town of Point Comfort is located in Calhoun County, Texas just west of the FPC-TX facility. Agricultural land is present to the north, east, and west of FPC-TX. The residential wells that were sampled are located along Country Road 1593 or Country Road 172 in Jackson County, Texas in both Calhoun and Jackson County.

3.0 SAMPLING ACTIVITIES

3.1 Groundwater Sampling Activities

Three residential groundwater wells and four agricultural wells were sampled on April 6, April 7, and April 8, 2010. Five of these wells contained dedicated pumps, which were not conducive for the use of the low-flow purging and sampling technique. As a result, groundwater field parameters were not measured during the purging of these wells. The wells were purged for 10-15 minutes or until the reservoir tank was emptied to ensure that representative samples were collected. Groundwater samples were collected directly from outdoor taps (not from a garden hose) located near the well heads. Two of the agricultural wells were windmill wells. One of the windmill wells had an open-top casing, but the other windmill well had a cap on the top of the casing. The windmill with the open-top casing was sampled using a peristaltic pump and the low-flow purging and sampling technique. The other windmill well sample was collected from the pipe extending to the cattle watering tank, which was the only available sample collection port. A total of seven groundwater samples and four quality assurance/quality control samples (field duplicate, matrix spike/matrix spike duplicate, field blank, and trip blank) were collected during this sampling event. A matrix that identifies the residential/agricultural wells, sample identifications (IDs), and global position system (GPS) coordinates is provided in Table 2.

All groundwater samples were hand delivered to the EPA Region 6 Laboratory in Houston, Texas on April 8, 2010. All samples were received by the laboratory in good condition and within $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$.

Table 2
Sample Table

Sample ID	Sample Date	Sample Time	Sample Type	Sample Technique	Location	GPS Coordinates
GW-FP-01	04/06/2010	1350	Parent Sample	Grab	Woodland Ranch	N28.73372°, W96.45835°
GW-FP-09	04/06/2010	1405	Field Duplicate	Grab	Woodland Ranch	N28.73372°, W96.45835°
GW-FP-02	04/07/2010	0815	Parent Sample	Grab	Mumme Ranch	N28.74203°, W96.55221°
GW-FP-03	04/07/2010	0910	Parent Sample	Grab	Mumme Ranch	N28.73918°, W96.55679°
GW-FP-04	04/07/2010	1215	Parent Sample	Grab	Dugger Ranch	N28.75227°, W96.54662°
GW-FP-05	04/07/2010	1535	Parent Sample, Matrix Spike/ Matrix Spike Duplicate	Low-Flow	Dugger Ranch	N28.74559°, W96.58011°
FB-01	04/07/2010	1610	Field Blank	Grab	Dugger Ranch	N28.74559°, W96.58011°
TB-01	04/07/2010	1510	Trip Blank	Grab	Not Applicable	Not Applicable
GW-FP-06	04/08/2010	0820	Parent Sample	Grab	Weaver Ranch	N28.71777°, W96.49619°
GW-FP-07	04/08/2010	0930	Parent Sample	Grab	Weaver Ranch	N28.73181°, W96.51011°

3.2 Documentation

Booz Allen field personnel recorded all field activities conducted between April 6 and April 8, 2010, into field logbooks. Attachment A provides copies of field book notes, and Attachment B provides the signed chain-of-custody form. Additionally, photographs were taken during groundwater sampling events and the photographic log is provided as Attachment C.

ATTACHMENT A
COPY OF FIELD NOTES

ATTACHMENT B

COPY OF SIGNED CHAIN-OF-CUSTODY FORM

ATTACHMENT C
PHOTOGRAPHIC LOG



Photo Number: 01

Photographer: Angela Sederquist

Location: Woodland Ranch

Description: View of sample location for GW-FP-01 and GW-FP-09 (field duplicate) collected from the Woodland residential well

City: Port Comfort

State: Texas

Date: 04/06/2010

Time: 1400 hours

Direction: Downward

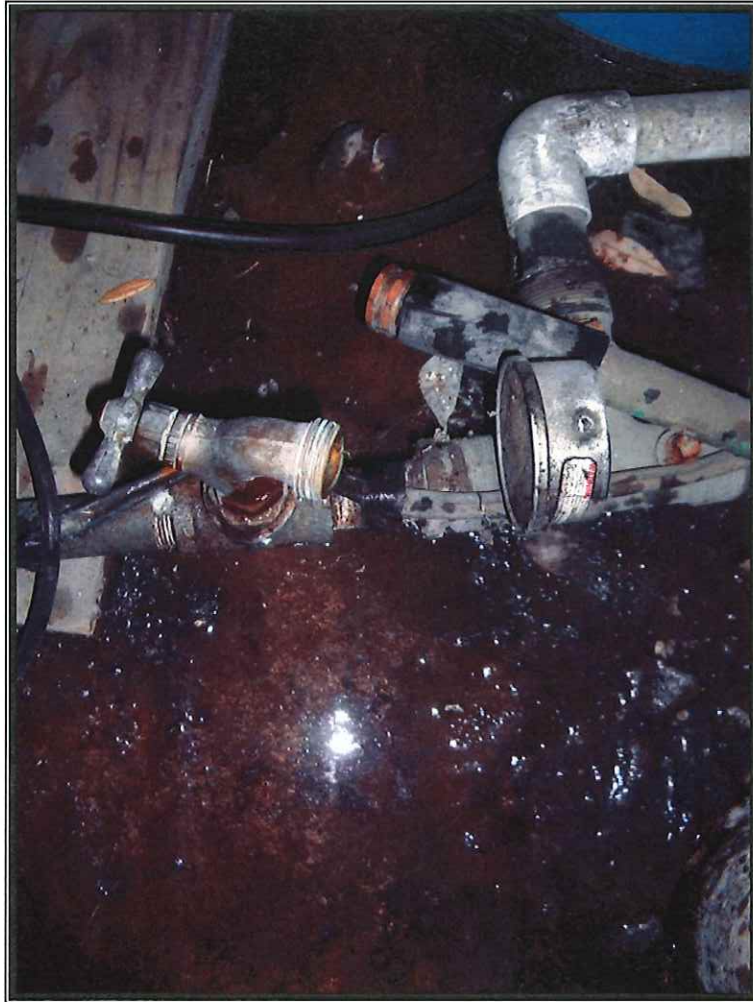


Photo Number: 02

Photographer: Angela Sederquist

Location: Woodland Ranch

Description: Close-up view of the faucet from which samples GW-FP-01 and GW-FP-09 (field duplicate) were collected

City: Port Comfort

State: Texas

Date: 04/06/2010

Time: 1401 hours

Direction: Downward



Photo Number: 03

Photographer: Angela Sederquist

Location: Woodland Ranch

Description: View of the residential well house from which samples GW-FP-01 and GW-FP-09 (field duplicate) were collected

City: Port Comfort

State: Texas

Date: 04/06/2010

Time: 1402 hours

Direction: West



Photo Number: 04

Photographer: Angela Sederquist

Location: Woodland Ranch

Description: View of the residential well house from which samples GW-FP-01 and GW-FP-09 (field duplicate) were collected

City: Port Comfort

State: Texas

Date: 04/06/2010

Time: 1403 hours

Direction: East

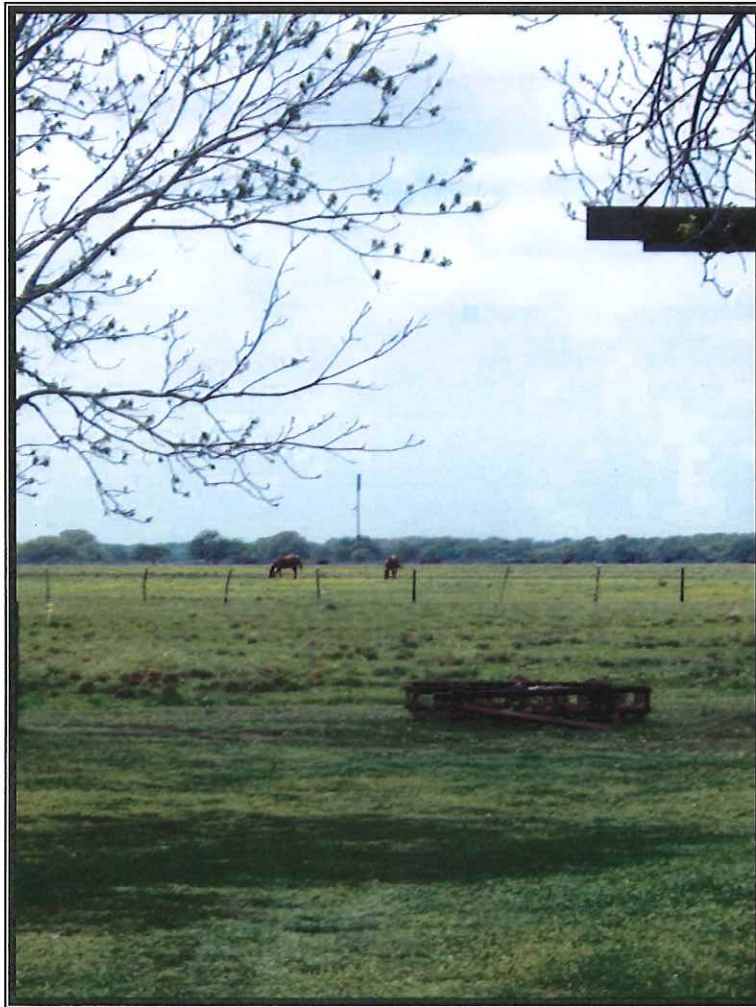


Photo Number: 05

Photographer: Angela Sederquist

Location: Woodland Ranch

Description: View of Formosa's Emergency Broadcast System from the
Woodland residence

City: Port Comfort

State: Texas

Date: 04/06/2010

Time: 1404 hours

Direction: East



Photo Number: 06

Photographer: Angela Sederquist

Location: Mumme Ranch

Description: View of the residential well house from which sample GW-FP-02 was collected

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 0750 hours

Direction: East



Photo Number: 07

Photographer: Angela Sederquist

Location: Mumme Ranch

Description: View of the well head from which sample GW-FP-02 was collected

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 0751 hours

Direction: East



Photo Number: 08

Photographer: Angela Sederquist

Location: Mumme Ranch

Description: View of the residential well house from which sample GW-FP-02 was collected

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 0752 hours

Direction: West



Photo Number: 09

Photographer: Angela Sederquist

Location: Mumme Ranch

Description: View of the faucet at sampling location for sample GW-FP-02

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 0753 hours

Direction: West

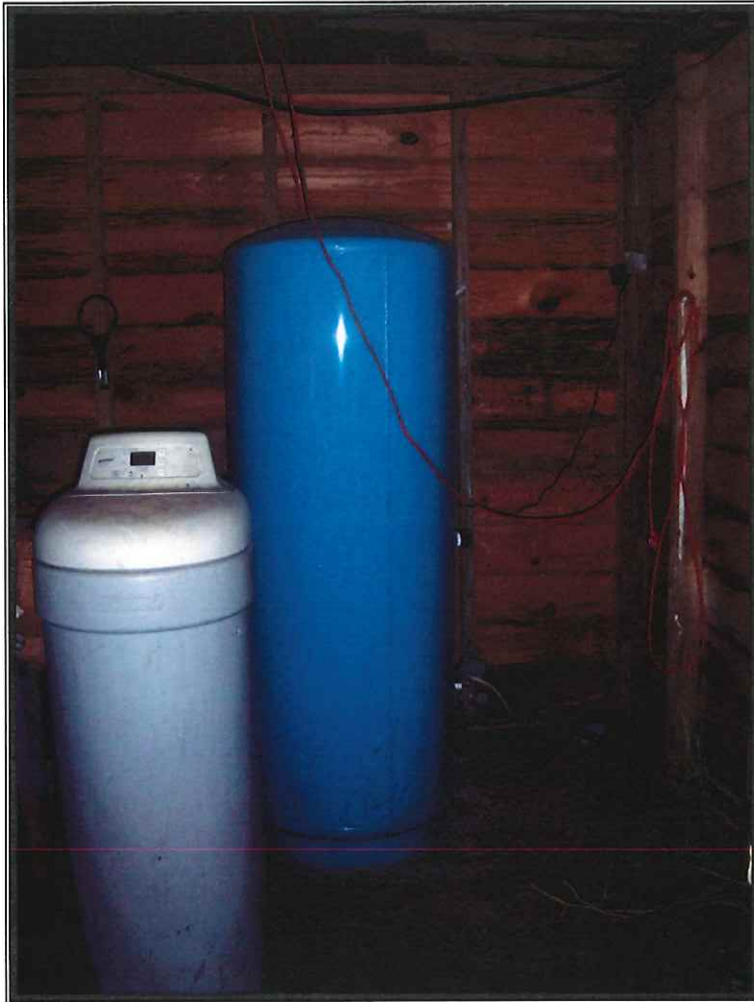


Photo Number: 09A

Photographer: Angela Sederquist

Location: Mumme Ranch

Description: View of the pressure tanks within the well house for sampling location GW-FP-02 (Note: photo inadvertently not recorded in logbook)

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 0754 hours

Direction: South



Photo Number: 10

Photographer: Angela Sederquist

Location: Mumme Ranch

Description: View of the agricultural well from which sample GW-FP-03 was collected

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 0840 hours

Direction: West

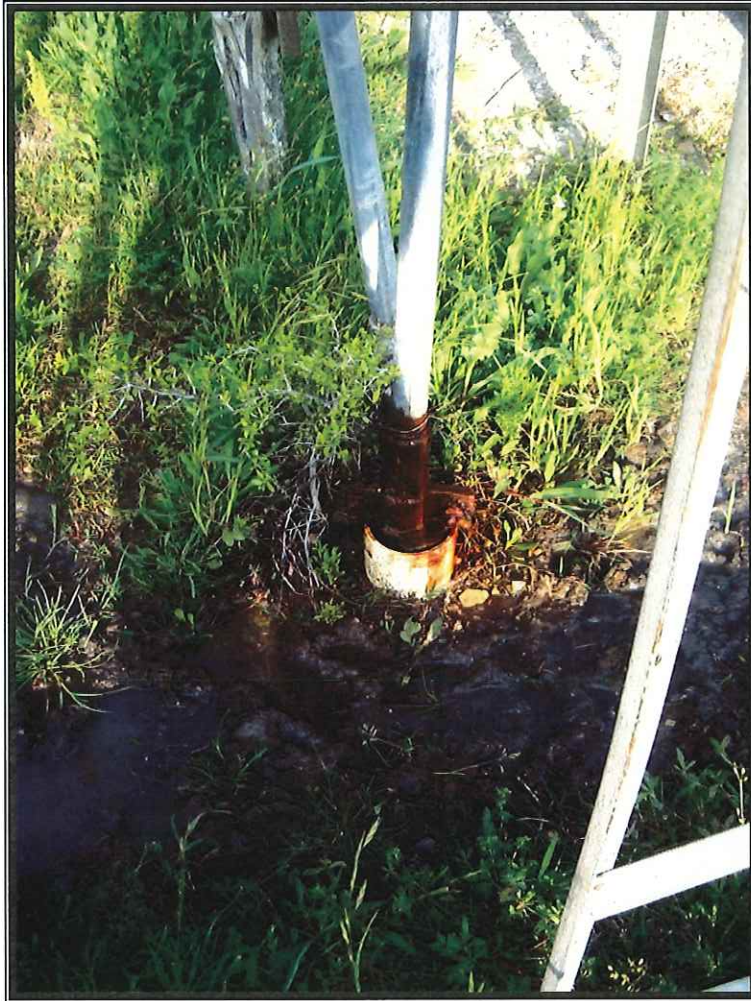


Photo Number: 11

Photographer: Angela Sederquist

Location: Mumme Ranch

Description: View of the ground surface of the agricultural well from which
sample GW-FP-03 was collected

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 0841 hours

Direction: Downward

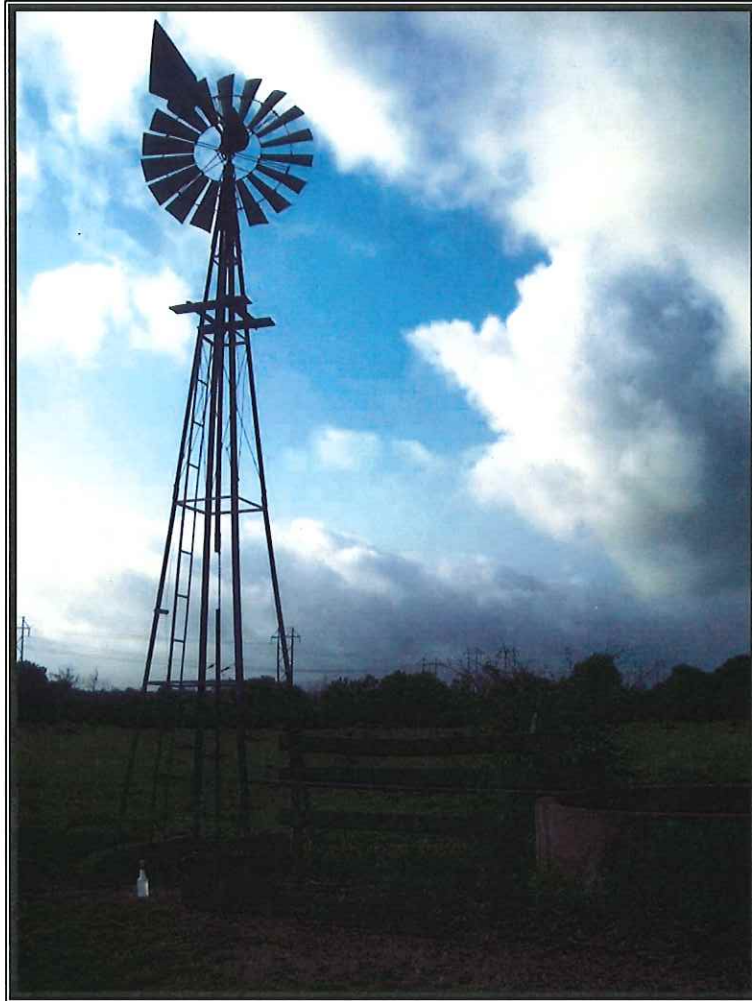


Photo Number: 12

Photographer: Angela Sederquist

Location: Mumme Ranch

Description: View of the agricultural well from which sample GW-FP-03 was collected

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 0842 hours

Direction: Southeast



Photo Number: 13

Photographer: Angela Sederquist

Location: Mumme Ranch

Description: View of the water flowing from agricultural well

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 0843 hours

Direction: South



Photo Number: 14

Photographer: Angela Sederquist

Location: Mumme Ranch

Description: View of Wally Orear locking the gate to the Mumme Ranch

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 0920 hours

Direction: West



Photo Number: 15

Photographer: Angela Sederquist

Location: Mumme Ranch

Description: View of the locked gate to the Mumme Ranch

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 0920 hours

Direction: West



Photo Number: 16

Photographer: Angela Sederquist

Location: Dugger Ranch

Description: View of the middle pasture agricultural well on the Dugger Ranch

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 1208 hours

Direction: North



Photo Number: 17

Photographer: Angela Sederquist

Location: Dugger Ranch

Description: View of the pressure tank and sampling location for Sample GW-FP04

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 1220 hours

Direction: Downward

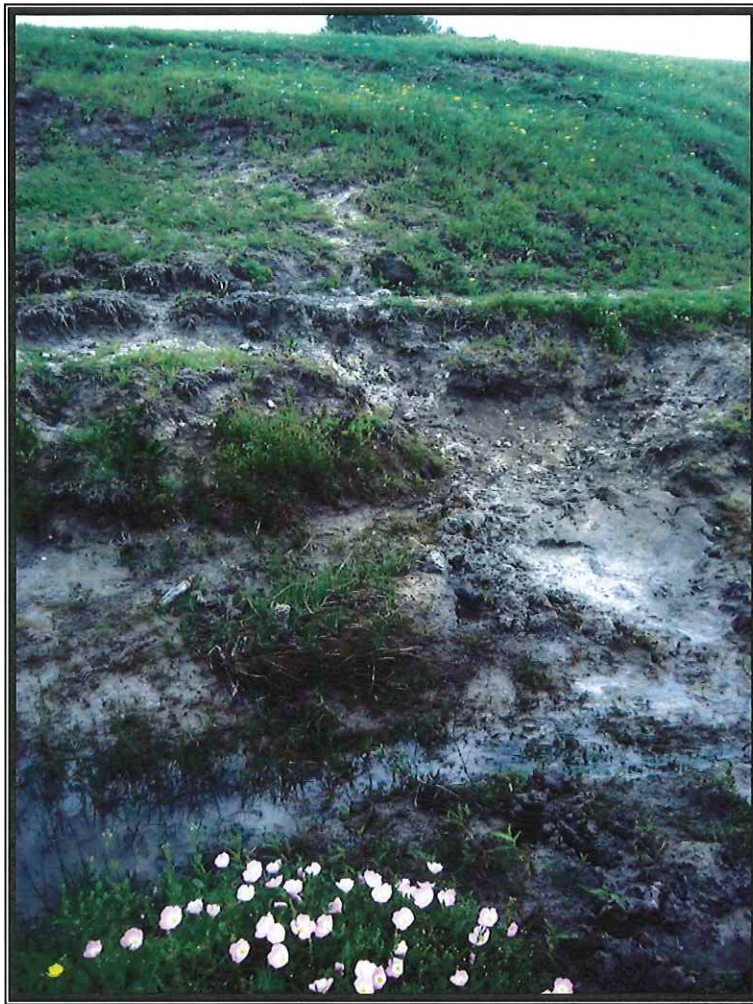


Photo Number: 18

Photographer: Angela Sederquist

Location: Dugger Ranch

Description: View of the seeps in Coks Creek

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 1245 hours

Direction: Northeast



Photo Number: 19

Photographer: Angela Sederquist

Location: Dugger Ranch

Description: View of the seeps in Cocks Creek

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 1246 hours

Direction: Downward



Photo Number: 20

Photographer: Angela Sederquist

Location: Dugger Ranch

Description: View of the seeps in Cocks Creek at Southern Boundary

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 1252 hours

Direction: Downward

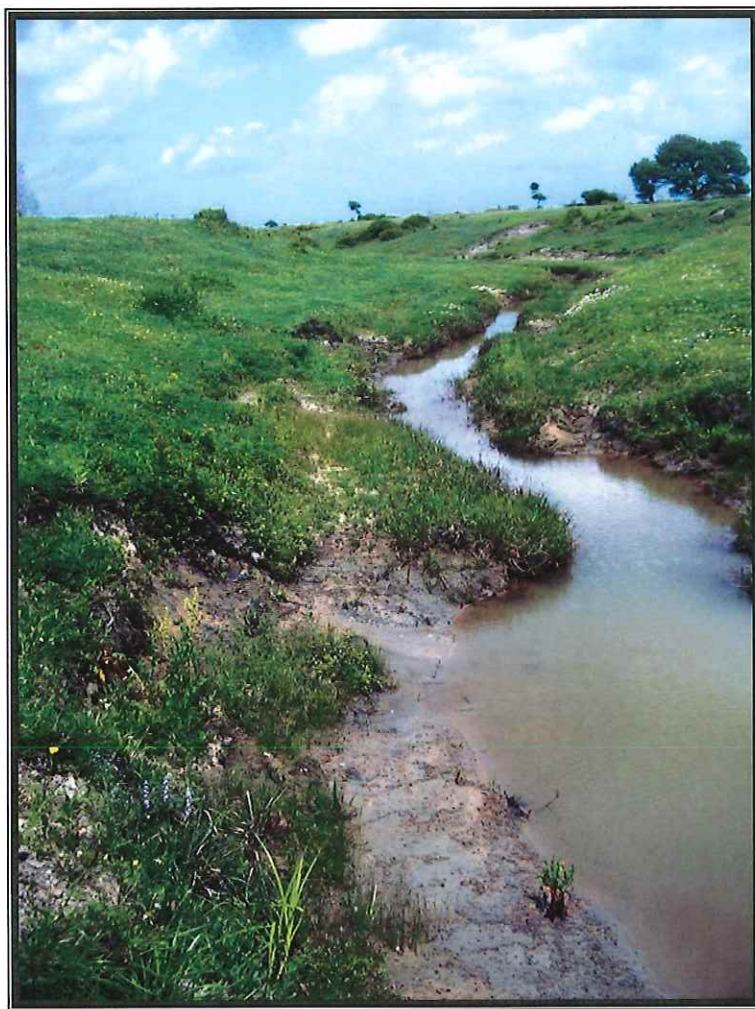


Photo Number: 21 Photographer: Angela Sederquist
Location: Dugger Ranch
Description: View of the seeps in Coks Creek at southern property boundary
City: Port Comfort State: Texas
Date: 04/07/2010 Time: 1252 hours Direction: North



Photo Number: 22

Photographer: Angela Sederquist

Location: Dugger Ranch

Description: View of the agricultural well in the flats area of the ranch

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 1610 hours

Direction: North



Photo Number: 23

Photographer: Angela Sederquist

Location: Dugger Ranch

Description: View of the well casing of the agricultural well from which sample GW-FP-05 was collected

City: Port Comfort

State: Texas

Date: 04/07/2010

Time: 1610 hours

Direction: Downward



Photo Number: 24

Photographer: Angela Sederquist

Location: Weaver Ranch

Description: View of the Weaver residential well house

City: Port Comfort

State: Texas

Date: 04/08/2010

Time: 0809 hours

Direction: North



Photo Number: 25

Photographer: Angela Sederquist

Location: Weaver Ranch

Description: View of the faucet outside of the well house

City: Port Comfort

State: Texas

Date: 04/08/2010

Time: 0810 hours

Direction: West

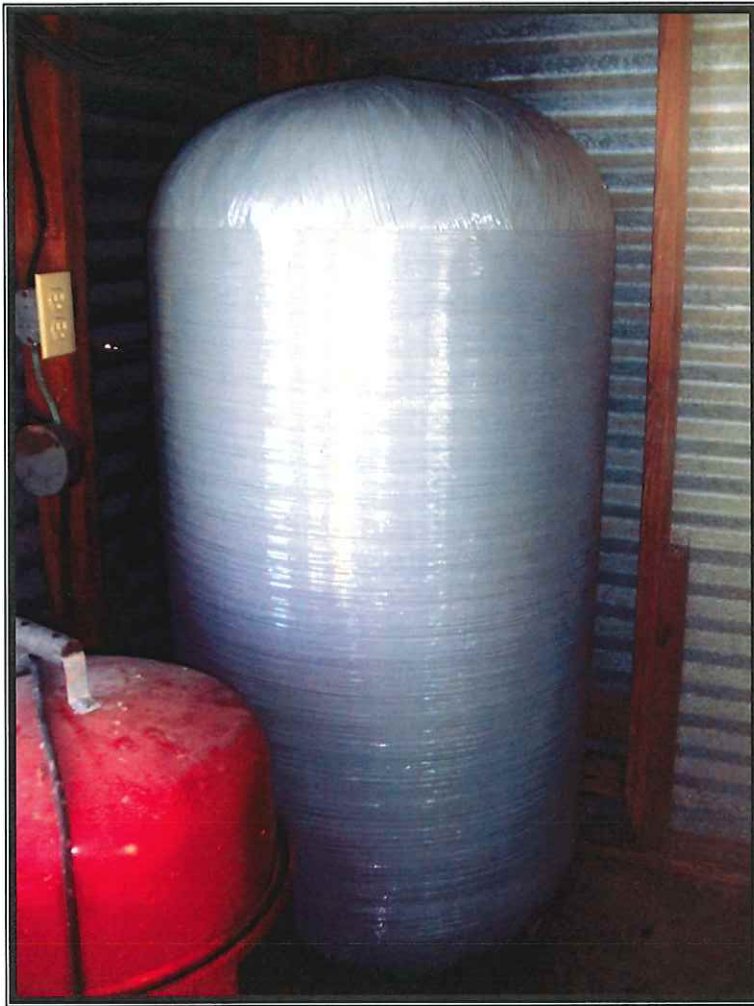


Photo Number: 26

Photographer: Angela Sederquist

Location: Weaver Ranch

Description: View of the pressure tank located within the well house

City: Port Comfort

State: Texas

Date: 04/08/2010

Time: 0811 hours

Direction: South



Photo Number: 27

Photographer: Angela Sederquist

Location: Weaver Ranch

Description: View of the agricultural well from which sample GW-FP-07 was collected

City: Port Comfort

State: Texas

Date: 04/08/2010

Time: 0909 hours

Direction: West



Photo Number: 28

Photographer: Angela Sederquist

Location: Weaver Ranch

Description: View of the agricultural well from which sample GW-FP-07 was collected.

City: Port Comfort

State: Texas

Date: 04/08/2010

Time: 0910 hours

Direction: East